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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Hiromu Ueshima

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EXAMINER

D AGOSTINO, PAUL ANTHONY

ART UNIT

PAPER NUMBER

3714

NOTIFICATION DATE

DELIVERY MODE

09/11/2009

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/542,571	Applicant(s) UESHIMA ET AL.	
	Examiner Paul A. D'Agostino	Art Unit 3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 February 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 04/000,441.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This responds to Applicant's Arguments/Remarks filed 02/18/2009. Claims 1, 12 and 16 have been amended. Claims 1-20 are pending in this application.

Response to Amendment

1. Claims 1 and 20 have been amended to correct minor informalities. Thus, the objection to the claims is withdrawn.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein

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were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-10 and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Pub. No. 2003/0171142 to Kaji et al. (Kaji) of record in view of U.S. Patent No. 6,047,085 to Sato et al. (Sato) of record.

In Reference to Claim 1, 12, 16, 18, and 20

Kaji discloses an entertainment apparatus and method using cards for obtaining inputs from a plurality of cards on each of which a visually human-identifiable design is printed and performing information processing in accordance with the inputs [0014], comprising:

a card photographing part (Fig. 2 “terminal apparatus” 16a) for fixing said card in a predetermined position (system and method perform this intended use wherein the card is set on the surface of the terminal apparatus in a single plane so the image can be photographed);

a photographic device that is configured to photograph said design of said card that is set at said predetermined position in said card photographing part and to fetch a photographic pixel data array ([0015, 0020, 0196-1098, 0201]);

a database including a plurality of entries individually corresponding to said plurality of cards, each of the entries including a pair of a card ID and a comparison data array ([0024]);

a card identifier for searching said database for a specific comparison data array based on said photographic pixel data array and obtaining a card ID pairing up with the specific comparison data array and an information processor for performing said information processing with said card ID obtained by said card identifier as an input ([0011, 0202]);

wherein the photographic device includes an image sensor (Fig. 3 and [0153] for photographing the design and outputting a photographic signal (system and method perform this intended use);

a data array former ([0187-0192]) for sampling the photographic signal and forming a data array (system and method disclose this intended use), and

a photographic pixel data array former (said data array former discloses the formation of data for calculation of points on the image sensed for computation and therefore necessarily must include a data array former) for re-sampling the data array and forming the photographic pixel data array and forming the photographic pixel data array and said photographic pixel array (system and method perform these intended uses),

wherein the data array formed by the data array former is constituted by a plurality of pixel data ([0184-0185), and

wherein the photographic pixel data array formed by the photographic

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pixel data array former is constituted by a plurality of [f] photographic pixel data ([0184-0185]).

{a storage medium that is readable by a processor of a card identifying apparatus and stores an identifying program by which a plurality of cards on each of which is visually human-identifiable design is printed can be identified, said program implementing the above steps ([0013-0014, 0047]).

However, Kaji is silent wherein the photographic pixel data array former sequentially extracts a predetermined number of pixel data of pixels adjacent to each other in an image represented by the photographic signal from the plurality of pixel data constituting the data array while the extracted pixel data are changed sequentially, and produces said single photographic pixel data based upon the extracted predetermined number of pixel data every time the predetermined number of pixel data is extracted.

Sato concerns an analogous image identifying apparatus and methods using averaging of secondary patterns (Title and Col. 1 Lines 18-21) wherein pixel data sequentially extracts a predetermined number of pixel data of pixels adjacent to each other in an image represented by the photographic signal from the plurality of pixel data constituting the data array (Fig. 11 wherein 70 sequential adjacent pixels are extracted) while the extracted pixel data are changed sequentially (Figs. 12 where weight factors are applied, equivalent to Applicant's averaging), and produces said single photographic pixel data based upon the extracted predetermined number of pixel data every time the predetermined number of pixel data is extracted (Fig. 13). Sato provides this system

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and method in order to “provide an image identifying apparatus capable of identifying color images and patterns with precision and speed” (Col. 1 Lines 4-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the averaging secondary pattern as taught by Sato into the teachings of Kaji in order to provide image identification with precision and speed.

In Reference to Claims 2-5, 17, and 19

Kaji teaches wherein said data array former samples said photographic signal at a first resolution ([0193]), and said photographic pixel data array former re-samples said data array at a second resolution which is lower than said first resolution (Kajo teaches of making the resolution course in general in order to save time ([0196-0199]), and said comparison data array includes comparison data corresponding to said second resolution (“pattern matching process ([0200])).

Kaji teaches of a card identifier and of calculating a distance between said photographic pixel data array and said comparison data array, and obtains the card ID of the entry ([0011]) with the comparison data array at the shortest distance ([0201]).

Kaji teaches the distance is a sum total of squares of differentials between the respective elements of said photographic pixel data array and the corresponding elements of said comparison data array ([0188-0192]). Kaji discloses the claimed invention except for wherein the distance is a sum total of absolute values of differentials. It would have been obvious to one of ordinary skill in the art at the time the invention was made to try other computational methods, since the Examiner takes

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Official Notice of the equivalence of sum total of absolute values and sum total of squares methods for their use in the image identification art and the selection of any of these known equivalents to image identification would be within the level of ordinary skill in the art.

In Reference to Claim 6

Kaji as modified by Sato discloses a system substantially equivalent to Applicant's claimed invention. However, Kaji is not explicit about single pixel data array by calculating a sum while weights are assigned.

Sato teaches of calculating a sum of a predetermined number of pixel data (Figs. 11-13) wherein weights are assigned in order to "provide an image identifying apparatus capable of identifying color images and patterns with precision and speed" (Col. 1 Lines 4-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the averaging secondary pattern as taught by Sato into the teachings of Kaji in order to provide image identification with precision and speed.

In Reference to Claim 7

Kaji teaches of a card identifier and of a threshold value determination for determining whether or not said sum total of differentials is larger than a predetermined threshold value ([0203]) and excludes any entry with said sum total of differentials larger than said predetermined threshold value from identification candidates ([0204 -0213])

In Reference to Claim 8

Kaji teaches of a card identifier and of a number- of-candidates determiner for determining a total number of candidates which are left as a result of determination by said threshold value determiner, and does not obtain any card ID when it is determined by said number-of-candidates determiner that the number of candidates is "0", and obtains the card ID of the identification candidate when it is determined that the number of candidates is "1" ([0215, 0202]).

In Reference to Claim 9

Kaji teaches a second database including one or more entries, each of the entries including a plurality of candidate card IDs and one determination card ID, wherein said card identifier includes a number-of-candidates determiner for determining whether two or more said identification candidates are left or not, searches said second database for an entry in which there is a match between a combination of card IDs of the left candidates and a combination of said candidate card IDs in said second database when it is determined by said number-of-candidates determination that the number of candidates is "two or more" and, if there exists any matching entry ([0387 and 0388]).

In Reference to Claim 10

Kaji teaches wherein said the database includes card data corresponding to each entry, and said information processor includes a card data displayer for displaying at

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least the design based on the card data of the entry corresponding to said card ID obtained by said card identifier ([0153]).

In Reference to Claim 13

Kaji teaches wherein a light source for indirectly irradiating light to a surface to be photographed of the card set in said card photographing part ([0156]).

In Reference to Claim 14

Kaji teaches wherein a reflector for diffusely reflecting light from said light source and letting the light enter said surface to be photographed ([0020]).

In Reference to Claim 15

Kaji discloses wherein a photographing part cover for covering said card photographing part, the cover having a position correction mark on a surface opposite to said photographic device ([0022]); and a photographic pixel data fetching area corrector for correcting a fetching area of photographic pixel data based on said position correction mark, wherein said photographic device photographs said position correction mark under a state where no card is set in said card photographing part ([0021]).

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaji in view of U.S. Patent Pub. No. 2002/0028710 to Ishihara et al. (Ishihama) of record.

However, Kaji as modified by Sato, teaches an entertainment apparatus as mention in claim 1 above but does not specifically disclose a cartridge connector,

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wherein said cartridge connector is equipped with a memory cartridge and the memory cartridge stores another database.

Ishihara teaches a cartridge connector equipped with a memory cartridge and the memory cartridge stores another database ([0038]).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the memory cartridge taught by Ishihara to the entertainment apparatus of Kaji as modified by Sato in order to hold larger amount of data representing the individual features of the game characters.

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaji and Sato further in view of U.S. Patent No. 7,006,693 to Shibuya (Shibuya) of record.

Kaji as modified by Sato discloses a system substantially equivalent to Applicant's claimed invention. However, Kaaji as modified by Sato, does not specifically disclose the distance as a sum total of absolute values of differentials between respective elements of said photographic pixel data array and corresponding elements of said comparison data array.

Shibuya teaches the distance is a sum total of absolute values (Col.2 Lines 16-18 and Col.4; Lines 64-67) in order to quickly and easily recognize the position, quantity, and kind of object in a recognition method (Col. 2 Lines 30-31).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the system and method as taught by Shibuya in the invention of Kaji as modified by Sato in order to quickly and easily recognize the position, quantity, and kind of object in a recognition method (Col. 2 Lines 30-31).

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8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimura in view of Sato.

Shimura teaches a method of identifying a card by photographing a plurality of cards on each of which a visually human-identifiable design is printed, including steps of:

(a) preparing a database including a plurality of entries individually corresponding to said plurality of cards, each of the entries including a pair of a card ID and a comparison data array (Col.3; lines 17-26);

(b) photographing said design of said card being fixed at a predetermined position of a photographing part by an image sensor and obtaining a photographic signal (Col.3 Lines 27-29);

(c) sampling said photographic signal at a first resolution and forming a data array (Co1.3 Lines 30-47);

(d) re-sampling said data array to form photographic pixel data array (Co1.3 Lines 30-47); and

(e) searching said database for a specific comparison data array based on said photographic pixel data array and obtaining the card ID pairing up with the specific comparison data array (Col. 4; Lines 26-43) wherein the data array formed in step (c) is constituted by a plurality of pixel data (Col. 3 Lines 30-47) and

wherein the photographic pixel data array in said step (d) is constituted by a plurality of photographic pixel data (Col. 3 Lines 30-47).

Shimura discloses a system substantially equivalent to Applicant's claimed

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invention. However, Shimura is silent wherein said step (d) includes (d1) sequentially extracting a predetermined number of pixel data of pixels adjacent to each other in an image represented by the photographic signal from the plurality of pixel data constituting the data array while the extracted pixel data are changed sequentially, and (d2) producing [[a]] said single photographic pixel data based upon the predetermined number of pixel data extracted by the step (d) at every time said step (d1) is executed, and (f) executing information processing according to the obtained card ID.

Sato concerns an analogous image identifying apparatus and methods using averaging of secondary patterns (Title and Col. 1 Lines 18-21) wherein pixel data sequentially extracts a predetermined number of pixel data of pixels adjacent to each other in an image represented by the photographic signal from the plurality of pixel data constituting the data array (Fig. 11 wherein 70 sequential adjacent pixels are extracted) while the extracted pixel data are changed sequentially (Figs. 12 where weight factors are applied, equivalent to Applicant's averaging), and produces said single photographic pixel data based upon the extracted predetermined number of pixel data every time the predetermined number of pixel data is extracted (Fig. 13). Sato provides this system and method in order to "provide an image identifying apparatus capable of identifying color images and patterns with precision and speed" (Col. 1 Lines 4-7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the averaging secondary pattern as taught by Sato into the teachings of Shimura in order to provide image identification with precision and speed.

Response to Arguments

9. Applicant's arguments filed 2/18/2009 have been fully considered but they are not persuasive. Applicant argues (see Applicant's Arguments/Remarks pages 11-16) that Kaji in view of Sato fails to fix the cards in a predetermined position and conversely that the cards are arranged in an arbitrary position. Examiner respectfully disagrees. The invention of Kaji as modified by Sato requires that the cards be placed on the surface of the terminal apparatus in order to be photographed. Thus, the planar surface is a fixed predetermined position. Alternatively, the invention of Kaji as modified by Sato considered any position to be "fixed" and is robust to accommodate infinite fixed positions. Thus, the rejection of the independent claims is maintained.

10. Applicant argues that the lighting of Kaji results in less accurate pattern matching. Examiner respectfully disagrees. Arguments over accuracy are unimportant since the invention of Kaji as modified by Sato performs Applicant's claimed invention.

11. Applicant argues that the Sobel filtering is entirely different from the sampling processing for absorbing the positional deviation as in the present invention. Examiner respectfully disagrees. The Sobel filtering ([0195]) is one of several techniques employed in the invention of Kaji as modified by Sato to assess the positional coordinates and the angle of each of the player cards and to identify the card and locate the information in memory (0196-0198)]. Additionally, Kaji discloses a profiling process, outlining process, and pattern matching process ([0200]) which in part rely on Sobel filters yet the kernel of the Kaji invention is to read the player cards accurately by removing data that does not need to be processed ([0199]). Conversely, Applicant's

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argument is misdirected that the Sobel filtering is entirely different that Applicant's sampling process for absorbing positional deviation. Kaji employs a battery of steps which anticipate or render obvious Applicant's noise reduction and card displacement apparatus and method ([0364, 0379-0383, and 0409-0413]). Thus, the rejection of the claims is maintained.

12. Applicant argues that Sato cannot read the black and white code of the card and therefore cannot be properly combined with Kaji or Shimura. Examiner respectfully disagrees. Kaji also discloses that color ink can be used ([0215]) which is capable of reflecting invisible light. Therefore, one skilled in the art could properly combine the invention of Kaji with the invention of Sato in order to provide image identification with precision and speed. Additionally, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). Here, Sato teaches of an averaging method which in combination with the photographing apparatus of Kaji would disclose to one of ordinary skill in the art of the averaging technique regardless of the fact that Sato focuses on color. many skilled in the art would know that black and white can also be added to the array of colors potentially requiring to be read and addressed the color aspects using ordinary skill with a reasonable expectation of success to not average-out the black and white data.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

14. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul A. D'Agostino whose telephone number is (571)270-1992. The examiner can normally be reached on Monday - Friday, 7:30 a.m. - 5:00 p.m..

16. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dmitry Suhol can be reached on (571) 272-4430. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

17. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John M Hotaling II/
Supervisory Patent Examiner, Art Unit 3714

/Paul A. D'Agostino/
Examiner, Art Unit 3714